ALQEP
ALBERTA LABORATORY QUALITY ENHANCEMENT PROGRAM
College of Physicians and Surgeons of Alberta

REAGENTS/ METHODS IN USE BY ALQEP TRANSFUSION MEDICINE PARTICIPANTS

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Alberta Laboratory Quality Enhancement Program

The Transfusion Medicine (TM) Program of the Alberta Laboratory Quality Enhancement Program (ALQEP) provides mandated transfusion medicine proficiency testing for all laboratories performing TM test procedures in Alberta, British Columbia, Manitoba and Saskatchewan. As well, a number of laboratories in the Northwest Territories, Ontario and the Yukon Territory voluntarily participate in the program.

Transfusion Medicine Profiles

The ALQEP TM Program requests that participants complete a detailed profile upon registration. The profile is stored electronically by ALQEP and a copy is distributed to participants biannually with a request to enter and submit any changes that have occurred in the laboratory test methods or reagents. The last profile update request occurred in the fall of 2004. Data from the profiles on file at ALQEP has been tabulated and is presented in this paper. Any additional changes to the profiles submitted by participants since the 2004 update have been incorporated.

Participant Demographics

ALQEP Transfusion Medicine Participants

Province	Level A*	Level B**	Total
Alberta	11	21	32
British Columbia	16	55	71
Manitoba	2	6	8
Ontario	1	0	1
Saskatchewan	4	30	34
Northwest Territories	0	3	3
Yukon Territory	0	1	1
Total	34	116	150

*Level A facilities: facilities that perform ABO & Rh(D) typing, antibody screen, crossmatch (if performed at facility) and complex serologic investigation including the routine availability of at least 22 in-date panel cells, antigen typing, as required, and specialized investigation techniques
**Level B facilities: facilities that perform ABO & Rh(D) typing, antibody screen, and crossmatch (if performed at facility); may perform basic serologic investigation including the routine availability of less than 22 in-date panel cells and possible antigen typing

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Participant Profiles Received: *# (% of total participants)*

Province	Level A	Level B	Total
Alberta	11 (100)	21 (100)	32 (100)
British Columbia	13 (81)	50 (91)	63 (89)
Manitoba	2 (100)	6 (100)	8 (100)
Ontario	1 (100)	na	1 (100)
Saskatchewan	4 (100)	30 (100)	34 (100)
Northwest Territories	na	3 (100)	3 (100)
Yukon	na	1 (100)	1 (100)
Total	31 (91)	111 (96)	142 (95)

Abbreviations

The following abbreviations are used in the paper.

Ab scr	antibody screen
AIDAT	albumin indirect antiglobulin test
Alb	albumin
Alb 37	albumin 37°C
ALQEP	Alberta Laboratory Quality Enhancement Program
Comm	commercial Rh control reagent
DAT	direct antiglobulin test
DBL	Dominion Biologicals Limited
Gel auto	gel technology – automated procedure
Gel man	gel technology – manual procedure
IAT	indirect antiglobulin test
IS	immediate spin
LIDAT	low ionic strength saline (LISS) indirect antiglobulin test
LIS	laboratory information system
Macro	macroscopic
Micro	microscopic
Min	minutes
Mono	monoclonal
Neg	negative
PEG	polyethylene glycol
PIDAT	polyethylene glycol indirect antiglobulin test
Poly	polyclonal
RT	room temperature
S & T	slide and tube
Sal	saline
Sal 37	saline 37°C
SIDAT	saline indirect antiglobulin test
SP auto	solid phase technology – automated procedure
SP man	solid phase technology – manual procedure
TM	Transfusion Medicine

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ABO Typing

93% of respondents perform ABO typing by a saline tube method with the majority of these reading after immediate spin. 7% use gel technology for ABO typing. 13% of the laboratories using a tube method indicated that they include a room temperature incubation prior to reading the ABO forward typing and 16% read the reverse typing after RT incubation. 97% of respondents indicate that they utilize monoclonal reagents for ABO typing and 3% state they use monoclonal/polyclonal blend reagents. 36% of responding laboratories routinely include anti-A,B as part of the ABO typing. While only 10% of Level A facilities include this test with all ABO typings, 43% of Level B laboratories do so. 4% of facilities use anti-A,B for group O samples only, 13% use the reagent for donor ABO confirmation testing and 17% utilize the reagent under other special circumstances. 4% of respondents routinely include A_2 cells with the ABO reverse typing, 10% include O cells and 13% perform an auto control in conjunction with the ABO typing.

ABO Forward Typing: *# (% of respondents)*

Method	IS	RT	Gel man	Gel auto	Total
Level A	26 (84)	3 (10)	1 (3)	1 (3)	31
Level B	87 (79)	16 (15)	7 (6)	0	110
Total	113 (80)	19 (13)	8 (6)	1 (1)	141

ABO Forward Typing: *# (% of respondents)*

Reagent Type	Mono	Mono/Poly	Total
Level A	31 (100)	0	31
Level B	104 (96)	4 (4)	108
Total	135 (97)	4 (3)	139

ABO Forward Typing: *# (% of respondents)*

Reagent Source	DBL	Immucor	Ortho	Total
Level A	23 (74)	0	8 (26)	31
Level B	83 (75)	3 (3)	24 (22)	110
Total	106 (75)	3 (2)	32 (23)	141

ABO Forward Typing – Use of Anti-A,B: *# (% of respondents)*

Criteria	Always	Group O	Donors	Babies	Discrepancies	Other
Level A	3 (10)	0	13 (42)	5 (16)	4 (13)	1 (3)
Level B	48 (43)	6 (5)	5 (5)	6 (5)	4 (4)	3 (3)
Total	51 (36)	6 (4)	18 (13)	11 (8)	8 (6)	4 (3)

ABO Reverse Typing: *# (% of respondents)*

Method	IS	RT	Gel Man	Gel Auto	Total
Level A	26 (84)	3 (10)	1 (3)	1 (3)	31
Level B	81 (76)	19 (18)	7 (7)	0	107
Total	107 (78)	22 (16)	8 (6)	1 (1)	138

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ABO Reverse Typing: *# (% of respondents)*

Reagent Source	DBL	Gamma	Immucor	Ortho	Total
Level A	20 (65)	0	5 (16)	6 (19)	31
Level B	50 (48)	2 (2)	15 (14)	38 (36)	105
Total	70 (51)	2 (1)	20 (15)	44 (32)	136

ABO Reverse Typing – Additional Cells: *# (% of respondents)*

Cells used	A_2	O	Auto
Level A	3 (10)	3 (10)	5 (16)
Level B	2 (2)	11 (10)	13 (12)
Total	5 (4)	14 (10)	18 (13)

Rh(D) Typing

80% of respondents perform Rh(D) typing by a saline tube immediate spin method and 7% use gel technology. 9% of respondents indicate that they include a room temperature incubation prior to reading the D typing and 5% of responses indicate methods that are not consistent with accepted routine D typing practice (i.e., sal 37, alb 37, SIDAT). 60% of respondents indicate that they utilize monoclonal IgM/IgG reagents for D typing, 23% use monoclonal IgM reagents and 14% state that they use monoclonal/polyclonal blend reagents. Slide and tube reagents are listed by 3%.

60% of responding facilities include an Rh control in conjunction with all D typing and 25% perform a control on all type AB or AB D-positive samples. 2% perform an Rh control only with weak D testing, 1% only on first testing and 11% of respondents state that they never perform an Rh control. Of those laboratories performing an Rh control, 53% use a commercially supplied reagent, 2% use a gel control, 4% use 22% albumin, 11% use 6–8% albumin and 24% use autologous serum or plasma. 6% use other reagents.

Rh(D) Typing: *# (% of respondents)*

Method	IS	RT	Sal 37	Alb 37	Gel man	Gel auto	SIDAT	Total
Level A	28 (90)	1 (3)	0	0	1 (3)	1 (3)	0	31
Level B	84 (77)	11 (10)	4 (4)	1 (1)	7 (6)	0	2 (2)	109
Total	112 (80)	12 (9)	4 (3)	1 (1)	8 (6)	1 (1)	2(1)	140

Rh(D) Typing: *# (% of respondents)*

Reagent type	Mono IgM	Mono IgM/IgG	Mono / poly	S & T	Total
Level A	6 (19)	21 (68)	2 (6)	2 (6)	31
Level B	26 (24)	63 (58)	18 (17)	2 (2)	109
Total	32 (23)	84 (60)	20 (14)	4 (3)	140

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Rh(D) Typing: *# (% of respondents)*

Reagent source	Ortho	DBL	Gamma	Immucor	Total
Level A	7 (23)	21 (68)	1 (3)	2 (6)	31
Level B	27 (25)	73 (67)	1 (1)	8 (7)	109
Total	34 (24)	94 (67)	2 (1)	10 (7)	140

Rh Control: *# (% of respondents)*

Criteria	Never	All	Group AB	AB Rh+	Weak D	1st testing	Total
Level A	0	15 (48)	10 (32)	5 (16)	0	1 (3)	31
Level B	16 (15)	69 (63)	17 (16)	4 (4)	3 (3)	0	109
Total	16 (11)	84 (60)	27 (19)	9 (6)	3 (2)	1 (1)	140

Rh Control: *# (% of respondent using an Rh control)*

Reagent type	Comm	22% Alb	6-8% Alb	5% Alb	3% Alb	Alb	Auto	Inert AB	Sal	Gel	Total
Level A	12 (39)	2 (6)	5 (16)	1 (3)	1 (3)	0	7 (23)	1 (3)	1 (3)	1 (3)	31
Level B	54 (58)	3 (3)	9 (10)	2 (2)	0	1 (1)	23 (25)	0	0	1 (1)	93
Total	66 (53)	5 (4)	14 (11)	3 (2)	1 (1)	1 (1)	30 (24)	1 (1)	1 (1)	2 (2)	124

Confirmation of Patient ABO and Rh Typings

63% of respondents indicate that they perform confirmatory ABO and Rh testing on patient samples, 2% perform ABO confirmation only and 2% perform Rh confirmation only. Of those performing confirmation, 72% confirm the typing on all samples and 28% perform the testing if there is no historical typing on file.

Confirmation Performed: *# (% of respondents)*

	ABO & Rh	ABO Only	Rh only	Total respondents
Level A	21 (68)	0	0	31
Level B	69 (62)	3 (3)	3 (3)	111
Total	90 (63)	3 (2)	3 (2)	142

ABO & Rh Confirmation: *# (% of respondents performing confirmation)*

Criteria	Always	No historical group
Level A	8 (38)	13 (62)
Level B	60 (82)	13 (18)
Total	68 (72)	26 (28)

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Antibody Screening

A wide variety of antibody screening protocols are followed by participants. The majority of facilities utilize the PEG indirect antiglobulin test (37%) or gel technology (29%). 79% perform a 3 cell screen and 21% use 2 cells only.

Of those participants performing a tube test method, 100% read the test after indirect antiglobulin test with 68% performing a macroscopic reading and 74% a microscopic reading. 66% read the test after immediate spin or room temperature incubation, and 48% read after 37° C incubation. Incubation times for the antibody screen vary. 56% of Level B participants using SIDAT method incubate the test for only 15minutes, which may not represent best practice (see Discussion).

52% of respondents include an auto control with the antibody screen and 25% routinely perform a DAT in conjunction with an antibody screen.

62% of facilities utilize an antiglobulin sera that contains anti-IgG only whereas 38% use a polyspecific reagent.

Antibody Screening: *# (% of respondents)*

Sample Used	Serum	Plasma	Either	Total
Level A	2 (6)	22 (71)	7 (23)	31
Level B	35 (32)	53 (48)	22 (20)	110
Total	37 (26)	75 (53)	29 (21)	141

Antibody Screening: *# (% of respondents)*

Method	SIDAT	AIDAT	LIDAT	PIDAT	Gel man	Gel auto	SP man	SP auto	Total
Level A	0	0	4 (13)	12 (39)	10 (32)	2 (6)	3 (10)	0	31
Level B	18 (16)	6 (5)	13 (12)	41 (37)	29 (26)	1 (1)	1 (1)	2 (2)	111
Total	18 (13)	6 (4)	17 (12)	53 (37)	39 (27)	3 (2)	4 (3)	2 (1)	142

Antibody Screening: *# (% of respondents)*

# of Screening Cells	2	3	Total
Level A	11 (35)	20 (65)	31
Level B	19 (17)	91 (83)	110
Total	30 (21)	111 (79)	141

Antibody Screening: *# (% of respondents)*

Screening Cells - Source	DBL	Gamma	Immucor	Ortho	Total
Level A	11 (35)	0	6 (19)	14 (45)	31
Level B	41 (40)	1 (1)	14 (14)	47 (46)	103
Total	52 (39)	1 (1)	20 (15)	61 (46)	134

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Antibody Screening – Tube methods: *# (% of respondents)*

Readings at:	IS	RT	37	IAT Macro	IAT Micro
Level A	5 (31)	0	2 (13)	11 (69)	7 (44)
Level B	50 (64)	7 (9)	43 (55)	53 (68)	63 (81)
Total	55 (59)	7 (7)	45 (48)	64 (68)	70 (74)

Antibody Screening – Tube methods: *# (% of respondents)*

IAT Washing	Cell washer	Manual
Level A	16 (100)	0
Level B	37 (49)	38 (51)
Total	53 (58)	38 (42)

Antibody Screening – Tube methods: *# (% of respondents)*

PIDAT: Incubation Time	10 min	15 min
Level A	7 (58)	5 (42)
Level B	27 (66)	14 (34)
Total	34 (64)	19 (36)

Antibody Screening – Tube methods: *# (% of respondents)*

LIDAT: Incubation Time	10 min	15 min	20 min	30 min
Level A	3 (75)	1 (25)	0	0
Level B	4 (31)	7 (54)	1 (8)	1 (8)
Total	7 (41)	8 (47)	1 (6)	1 (6)

Antibody Screening – Tube methods: *# (% of respondents)*

SIDAT: Incubation Time	15 min	30 min	40 min
Level A	0	0	0
Level B	10 (56)	7 (39)	1 (6)
Total	10 (56)	7 (39)	1 (6)

Antibody Screening – Tube methods: *# (% of respondents)*

AIDAT: Incubation Time	15 min	30 min
Level A	0	0
Level B	2 (33)	4 (67)
Total	2 (33)	4 (67)

Antibody Screening: *# (% of respondents)*

Controls included	Auto	DAT
Level A	8 (26)	3 (10)
Level B	66 (59)	33 (30)
Total	74 (52)	36 (25)

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Antiglobulin Sera: *# (% of respondents)*

Reagent Type	Polyspecific – rabbit	Polyspecific - mono	IgG – rabbit	IgG – mono	Total
Level A	2 (9)	2 (9)	8 (36)	10 (45)	22
Level B	15 (16)	25 (27)	18 (19)	35 (38)	93
Total	17 (15)	27 (23)	26 (23)	45 (39)	115

Antiglobulin Sera: *# (% of respondents)*

Reagent Source	DBL	Gamma	Immucor	Ortho	Total
Level A	13 (50)	0	1 (4)	12 (46)	26
Level B	62 (65)	1 (1)	6 (6)	27 (28)	96
Total	75 (61)	1 (1)	7 (6)	39 (32)	122

Antibody Identification

The majority of respondents (65%) required antibody identification of each positive antibody screen, regardless of circumstances. However, a number of laboratories only require repeat antibody identification at defined intervals or if a change in antibody reactivity or patient history is noted.

Repeat antibody identification on positive antibody screen: *# (% of respondents)*

Frequency	Each specimen	Repeat every:						Change in reactivity	If possibly stimulated
		3 days	7 days	14 days	30 days	3 months	6 months		
Level A	14 (45)	5 (16)	1 (3)	3 (10)	1 (3)	0	0	10 (32)	3 (10)
Level B	79 (71)	4 (4)	2 (2)	2 (2)	0	2 (2)	1 (1)	15 (14)	17 (15)
Total	93 (65)	9 (6)	3 (2)	5 (4)	1 (1)	2 (1)	1 (1)	25 (18)	20 (14)

Compatibility Testing

The majority of respondents (85%) perform a serologic crossmatch, with 27% utilizing a saline immediate spin method. 15% of respondents routinely perform an electronic crossmatch, with 47% of Level A facilities choosing this method.

Crossmatch: *# (% of respondents)*

Method	Sal IS	SIDAT	AIDAT	LIDAT	PIDAT	Gel man	Electronic	Total
Level A	14 (47)	0	0	1 (3)	0	1 (3)	14 (47)	30
Level B	24 (22)	17 (15)	6 (5)	12 (11)	27 (24)	18 (16)	7 (6)	111
Total	38 (27)	17 (12)	6 (4)	13 (9)	27 (19)	19 (14)	21 (15)	141

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Confirmation of Donor ABO and Rh Typings

79% of respondents perform confirmatory ABO and D typing on all donor units received, 2% retype all type O units and 6% confirm O Rh negative units.

Confirmation Performed: *# (% of respondents)*

	All units	All type O	All O Rh Neg
Level A	26 (87)	0	1 (3)
Level B	85 (77)	3 (3)	8 (7)
Total	111 (79)	3 (2)	9 (6)

Postnatal Testing

82% of respondents perform postnatal testing, with 26% of those testing all deliveries and 73% testing only cases where the mother's Rh type is negative or unknown. Testing protocols vary widely among respondents.

Postnatal Testing: *# (% of respondents)*

Performed	Yes	No	Total
Level A	26 (84)	5 (16)	31
Level B	91 (82)	20 (18)	111
Total	117 (82)	25 (18)	142

Postnatal Testing: *# (% of respondents performing postnatal testing)*

Criteria	All deliveries	Moms – Rh Neg or unknown	Only on request
Level A	6 (23)	20 (77)	0
Level B	24 (26)	66 (73)	1 (1)
Total	30 (26)	86 (73)	1 (1)

Postnatal Testing: *# (% of respondents performing postnatal testing)*

Tests performed	ABO/Rh – mom	Rh – mom	ABO/Rh – cord	Rh – cord	Ab scr - mom	DAT – cord	Fetal cell screen / refer
Level A	14 (54)	1 (4)	24 (92)	1 (4)	14 (54)	23 (88)	22 (85)
Level B	55 (60)	2 (2)	87 (96)	4 (4)	40 (44)	81 (89)	45 (49)
Total	69 (59)	3 (3)	111 (95)	5 (4)	54 (46)	104 (89)	67 (57)

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Information Systems

68% of respondents indicate that a LIS is in place in the laboratory. Only one Level A facility does not have a LIS whereas 40% of Level B facilities do not have this technology. 56% of respondents do not have a Transfusion Medicine Information system.

Laboratory Information Systems: *# (% of respondents)*

System	Level A	Level B	Total
CCD	0	1 (1)	1 (1)
Cerner	4 (13)	0	4 (3)
Eclipsis	1 (3)	0	1 (1)
HealthVision	3 (10)	0	3 (2)
Labview	0	1 (1)	1 (1)
Mak Progesa	2 (6)	0	2 (1)
Medisolution	0	5 (5)	5 (4)
Meditech	10 (32)	17 (15)	27 (19)
Northern Software	0	2 (2)	2 (1)
RSA (Roses)	0	1 (1)	1 (1)
SCC	1 (3)	0	1 (1)
Soft Lab	1 (3)	0	1 (1)
Sunquest / Misys	3 (10)	8 (7)	11 (8)
Triple G	1 (3)	14 (13)	15 (11)
In-house developed	2 (6)	1 (1)	3 (2)
System source not identified	2 (6)	17 (15)	19 (13)
None	1 (3)	44 (40)	45 (32)
Total	31	111	142

Transfusion Medicine Information Systems: *# (% of respondents)*

System	Level A	Level B	Total
Part of LIS	26 (84)	31 (28)	57 (40)
In-house developed	1 (3)	1 (1)	2 (1)
Lifeline	1 (3)	0	1 (1)
Hemocare	2 (6)	0	2 (1)
None	1 (3)	79 (71)	80 (56)
Total	31	111	142

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Discussion

ABO Typing

Traditionally, anti-A,B was considered a necessary part of ABO forward typing as it was more effective than human anti-A or anti-B in detecting weakly expressed ABO antigens.[1,2,3] However, the use of monoclonal antibodies for the production of anti-A and anti-B has eliminated the necessity for the routine use of anti-A,B. The inclusion of A_2, O or autologous cells with an ABO typing may be useful in investigation of discrepant results but is considered to be of limited value in routine testing.[3]

Rh(D) Typing

The majority of respondents utilize appropriate methods, reagents and controls for Rh(D) typing. However, the profile responses indicate that a small number of facilities are not following accepted D-typing practice or are confused about the D testing performed in their laboratory. Laboratories should determine the characteristics of the reagent in use and manufacturer's instructions must be followed for all testing.

The use of an appropriate Rh control is required to ensure that false positive reactions are not occurring due to immunoglobulin coating of red cells or serum factors that induce rouleaux.[3] In the past, a manufacturer's control was supplied with slide and tube reagents. However, the advent of monoclonal anti-D reagents has changed the required Rh typing practice. The diluents for these reagents may contain from 3 to 8% bovine serum albumin and they are regarded as low-protein anti-D. Therefore, the routine use of an Rh control is not required with monoclonal Rh(D) typing reagents.[4,5,6] However, as red cells heavily coated with immunoglobulin may give unreliable results and spontaneous agglutination may occur in any saline-reactive test in the presence of cold autoagglutinins or rouleaux, a concurrent control must be performed for red cell specimens that demonstrate positive reactions in all ABO forward grouping and Rh typing tests (i.e., group AB, D-positive).[3,7] The recommended control reagent is a manufacturer's control, autologous serum, or 6 – 8% bovine serum albumin.[3]

Confirmation of Patient ABO and Rh(D) Typings

Confirmation of patient ABO typing is only required by standards[8,9] if an electronic (computer assisted) crossmatch is performed. Although only 15% of facilities utilize an electronic crossmatch, 65% of laboratories choose to perform ABO confirmation on patient samples. 65% of facilities also confirm the patient D type.

Antibody Screening

Transfusion medicine standards[8,9] require that antibody screening shall include a 37°C incubation followed by an indirect antiglobulin procedure that has been shown to have good sensitivity for the detection of clinically significant antibodies or an alternative test method with appropriate documentation of sensitivity. Although all facilities use test methods that are acceptable, a number of Level B laboratories incubate SIDAT antibody screens for only 15 minutes. It is generally recommended that 30 to 60 minute incubation is necessary for saline based tests[3] and these facilities should consider increasing the incubation time or changing to a method that includes an enhancement media.

Although it has been shown that the omission of reading of antibody screens at immediate spin phase, after 37°C incubation and microscopically does not result in significant patient risk,[1,3,10,11,12] a number of laboratories, most notably Level B facilities, continue these practices. As well, 52% of participants include an auto control with antibody screening and 25% routinely perform a direct antiglobulin test with pretransfusion testing. These tests are believed to be of limited clinical value.[3,13,14]

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Standards[8,9] state that the use of an antiglobulin reagent that contains only anti-IgG is acceptable and the use of a polyspecific reagent containing anti-complement has been shown to be unnecessary in pretransfusion testing.[15] While the use of a polyspecific reagent by a number of laboratories does not pose a risk to patient safety, it may result in unnecessary antibody investigation.

Antibody Investigation

Although the majority of participants continue to perform antibody identification on each sample with a positive antibody screen, a significant number of laboratories have streamlined their processes to include re-identification of known antibodies under defined criteria. While re-identification of known antibodies rarely serves a significant purpose, methods of testing must detect any additional clinically significant antibodies.[3]

Compatibility Testing

Most Level A facilities perform compatibility testing between patient and donor by either immediate spin crossmatch (49%) or electronic crossmatch (47%). The majority of Level B (85%) continue to perform a serologic crossmatch with 44% performing an antiglobulin method. This may indicate that the resources required for serologic crossmatch in a high volume facility are significant and better directed to other activities whereas smaller laboratories do not possess the required technology or feel that the additional confidence derived from a serologic crossmatch is of benefit.

Confirmation of Donor ABO and Rh Typings

Canadian transfusion medicine standards[8,9] only require that the transfusion service confirm the ABO type of donor red cells if a serologic crossmatch is not to be performed. AABB standards[16] require ABO confirmation of all donor units and Rh confirmation of all Rh negative units. The majority of respondents have chosen to perform this testing.

Postnatal testing

There is a wide variation of testing protocols used by those laboratories performing postnatal testing with acceptable practice represented in most areas. However, only 57% of respondents state that they perform or order fetal bleed detection tests when indicated by the mother and cord Rh types. This test is required by standards[8,9] and has significant impact on patient care. Laboratories should review their protocols to ensure that appropriate processes are in place.

Information Systems

While the majority (97%) of Level A facilities have a Laboratory Information System and a Transfusion Medicine Information System, a significant number of Level B laboratories (40% - LIS; 71% - TM information system) do not have access to these technologies.

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Conclusion

The responses to the Transfusion Medicine profiles indicate that while laboratory practices may vary widely, the majority of participants have methods and reagents in place that allow for acceptable testing results. This represents appropriate patient care and safety. A small number of laboratories should review testing processes and procedures. The use of an appropriate Rh control test and acceptable antibody screen incubation times are necessary to ensure accurate test results. Although the inclusion of various other aspects of testing does not introduce any direct patient risk, the resources required to perform these tests, or to investigate discrepant findings, could be better directed to other processes that may benefit patient outcome. Also, the investigation of clinically insignificant discrepant results not only places additional strain on resources, but may delay transfusion.

The ALQEP Transfusion Medicine Program distributes participant profiles for biannual revision and will report on any significant changes in laboratory practice following the next update.

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